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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,893	09/05/2000	Tsutae Shinoda	522.1919C3	9703

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EXAMINER

SANTIAGO, MARICELI

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Applicant(s)

09/654,893

Applicant(s)

SHINODA ET AL.

Examiner

Mariceli Santiago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-23 and 28-84 is/are pending in the application.
- 4a) Of the above claim(s) 18-20 and 24-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-32, 34-50 and 52-84 is/are rejected.
- 7) ☒ Claim(s) 33 and 51 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/010,169.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

The Amendment, filed on September 5, 2000, has been entered and acknowledged by the Examiner.

Cancellation of claims 1-17 has been entered.

The Amendment, filed on September 18, 2001, has been entered and acknowledged by the Examiner.

Cancellation of claim 39 has been entered.

The Amendment, filed on January 10, 2002, has been entered and acknowledged by the Examiner.

Claim Objections

Claim 57 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 57 recites the limitation "the phosphor layer covers the respective, opposing sidewalls of the pair of barriers" which was previously recited in preceding independent claim 53, from which claims 57 depends.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 18-20, 24-27, 63-79 and 83 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 18-20 and 24-27, claims are dependent upon cancelled claim 12, accordingly, claims 18-20 and 24-27 are indefinite since a claim cannot depend upon any cancelled claim. For examination purposes claims 18-20 and 24-27 have been withdrawn from consideration.

Claim 63 recites the limitation "the first substrate" in line 5. There is insufficient antecedent basis for this limitation in the claim. Claims 64-69 are further rejected because of their dependency status from rejected claim 63.

Claim 70 recites the limitation "the first substrate" in line 8. There is insufficient antecedent basis for this limitation in the claim. Claims 71-78 are further rejected because of their dependency status from rejected claim 70.

Claim 79 recites the limitation "the first substrate" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 83 recites the limitation "the underlying dielectric layer" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21, 22, 28, 29, 34, 35, 37, 38, 40-42, 44-47, 52, 53, 55-59, 61-64, 67, 69, 70, 72-75, 77-84 are rejected under 35 U.S.C. 102(e) as being anticipated by Sano (US 5,182,489).

Regarding claim 21, Sano discloses a full color surface discharge plasma display device (Fig. 3A and 3B) comprising first and second substrates (10 and 12) facing and parallel to each other for defining a space in which a discharge gas is filled, the first substrate being disposed on a side of a viewer, pairs of lines of display electrodes (14) formed on the first substrate facing the second substrate, each pair of lines of display electrodes (14) being parallel to each other and constituting an electrode pair for surface discharge, each of the display electrodes (14) comprising a combination of a transparent conductor line (14A) and a metal line (14B) in contact with the transparent conductor line (14A) and having a width narrower than that of the transparent conductor line (14A), a dielectric layer (18) over the display electrodes (14) and the first substrate (10), lines of address electrodes (16) formed on the second substrate (12) facing the first substrate (10) and running in a direction intersecting the lines of display electrodes (14), barriers (22) standing on the second substrate (12) in parallel to the address electrodes (16) for dividing the discharge gas space into cells, the barrier having sidewalls, three phosphor layer (28, Column 5, lines 19-26) different from each other in a successive order of the three luminescent colors along the extending lines of the display electrodes, the phosphor layers entirely covering the address electrodes and extending to the sidewalls of the barriers to cover almost entire surfaces of the side walls of the barriers (22, Column 5, lines 48-55), wherein adjacent three phosphors layers of the three different luminescent colors in a pair of lines of display electrodes define one image element of a full color display (Fig. 3A).

Regarding claim 22, Sano discloses a device wherein the total width of the display electrodes and a gap for discharge formed therebetween is less than 70% of a pitch of the pairs of display electrodes (Fig. 3B).

Regarding claims 28, 46, 63, 64, 67, 80, 82 and 84, Sano discloses a discharge cell of a surface discharge type plasma display panel (Fig. 3A and 3B), comprising a cavity (24) bounded by respective opposing and spaced sidewalls of a pair of barriers (22) superposed on a first substrate (12), the cavity extending commonly with the pair of barriers in a first direction, an address electrode (16) superposed on the first substrate (12), adjacent a bottom of the cavity and extending in the first direction, a pair of display electrodes (14) superposed on a surface of a second substrate (10), covered by an insulating layer (18) and positioned in opposed relationship with respect to the address electrode (16), the pair of display electrodes extending in a second direction, transversely to and crossing the barriers and the cavity therebetween, and defining the discharge cell, and a phosphor layer (28) disposed within the cavity and superposed on the first substrate, the phosphor layer (28) having a thickness in a range of from 10 μm to 50 μm (Column 5, lines 19-26).

Regarding claims 29 and 47, Sano discloses a discharge cell wherein the phosphor layer is formed on the first substrate, aligned within the cavity, and is superposed on and covers the address electrode and exposed portions of the first substrate between the spaced and opposing sidewalls and substantially the entire respective surfaces of the spaced and opposing sidewalls of the pair of barriers (Fig 2, Column 5, lines 48-55).

Regarding claims 34, 52 and 69, Sano discloses a discharge cell wherein each of the pair of display electrodes (14) comprises a metal conductor (14B) extending in the second direction, transverse to the first direction and the pair of spaced barriers, the pair of

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metal conductors (14B) having a combined width in the first direction which is limited so as not to block more than 21% of light emitted from the discharge cell.

Regarding claims 35, 37, 40, 41, 45, 53, 55, 57, 58, 62, 70, 72, 74, 75 and 79, Sano discloses a plasma display panel of a surface discharge type (Fig. 3A and 3B) and having an array, of plural columns in the first direction and plural rows in a second direction transverse to the first direction, of plural image elements, each image element comprising a respective set of unit luminescent areas, each set of unit luminescent areas comprising a set of discharge cells, wherein each discharge cell comprises, a cavity bounded at least in part by a respective cavity sidewall supported by a back substrate (12), an address electrode (16) supported by the back substrate (12), aligned with the cavity and extending in a first direction, a pair of display electrodes (14) supported by a front substrate (10), covered by an insulating layer (18) and positioned in opposed, spaced relationship with respect to, and extending in a second direction and crossing, a portion of the aligned address electrode (16) and defining the discharge cell (24) therebetween, a phosphor layer (28) disposed within the cavity and superposed on and covering the address electrode (16) and the opposed and spaced sidewalls and (28) having a thickness in a range of from 10 μm to 50 μm (Column 5, lines 19-26), and each set of discharge cells comprises a common number of discharge cells in successively spaced adjacent positions in the second direction, the respective phosphor layers of each set of the discharge cells being in a common sequence of respective, different colors, and the plural rows of the array having respective, common numbers of sets of discharge cells, aligned in the columns of the array (Fig. 3A).

Regarding claims 38, 56 and 73, Sano discloses a plasma display panel wherein the plural cells of each set are of a common width in the second direction (Fig. 3A).

Regarding claims 42, 59 and 77, Sano discloses a plasma display panel wherein each of the pair of display electrodes (14) of each discharge cell comprises a transparent conductor (14A) and a respective metal conductor (14B) extending therewith in the second direction, and the pair thereof provides a predetermined discharge gap at a central portion of the cell.

Regarding claims 44, 61 and 78, Sano discloses a discharge cell wherein each of the pair of display electrodes (14) comprises a metal conductor (14B) extending in the second direction, transverse to the first direction and the pair of spaced barriers, the pair of metal conductors (14B) having a combined width in the first direction which is limited so as not to block more than 21% of light emitted from the discharge cell.

Regarding claim 81, Sano discloses a plasma display panel (Fig. 5) further comprising a dielectric layer (32) formed on the rear substrate (12), and barriers (22) formed on the dielectric layer (32) defining discharge spaces (24).

Regarding claim 83, Sano discloses a plasma display panel (Fig. 5) wherein the address electrodes (16) are formed on the underlying dielectric layer (32).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30, 48 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,182,489) in view of Salavin et al. (US 5,066,890).

Regarding claims 30, 48 and 66, Sano discloses the claimed invention except for the limitation of wherein the pair of display electrodes has a discharge gap of a first width at a

central portion of a discharge cell and a gap of a second, greater width, at both end portions of the discharge cell. In the same field of endeavor, Salavin discloses PDP device comprising a display electrode arrangement wherein the pair of display electrodes has a discharge gap of a first width at a central portion of a discharge cell and a gap of a second, greater width, at both end portions of the discharge cell (Fig. 4) in order to provide further containment of the discharges and increase the luminance of each pixel. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the display electrodes arrangement disclosed by Salavin in the PDP of Sano in order to provide further containment of the discharges and increase the luminance of each pixel.

Claims 23, 31, 32, 43, 49, 50, 60, 65 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,182,489) in view of Wada et al. (US 4,692,662).

Regarding claims 23, 31, 32, 43, 49, 50, 60, 65 and 76, Sano discloses the claimed invention except for the limitation of in each discharge cell a top portion of each cavity sidewall has a dark color. In the same field of endeavor, Wada discloses a PDP device wherein in each discharge cell a top portion of each cavity sidewall has a dark color in order to reduce the reflection of incident ambient light upon the display panel (Column 4, lines 8-28). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the sidewall structure disclosed by Wada in the PDP device of Sano in order to reduce the reflection of incident ambient light upon the display panel.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29

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USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 35, 36, 38, 40, 42, 43, 53, 54, 56, 57, 59, 60, 80 and 84 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 16, 17, 18, 21 and 25 of U.S. Patent No. 5,661,500. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons.

U.S. Application SN 09/654,893	U.S. Patent No. 5,661,500	Reasons for rejection under obviousness-type double patenting
Claims 35, 40, 53, 57, 80 and 84	Claims 16 and 21	<p>Patent '500 claims a full color surface discharge type plasma display device comprising</p> <p>plural physical barriers having sidewalls, each barrier extending between the first and second common planes (first and second substrates), adjacent barriers defining laterally therebetween an elongated cavity which is uninterrupted through a length thereof and which isolates the respective elongated phosphor stripe,</p> <p>a plurality of pairs of display electrodes extending in parallel relationship with respect to each other in a first direction and disposed substantially in a first common plane (second substrate), each pair of display electrodes defining a surface discharge space therebetween;</p> <p>a plurality of sets of address electrodes disposed substantially in a second common plane, spaced from the first common plane, and extending in parallel relationship in a second direction transverse to the first direction and intersecting the display electrodes,</p> <p>a plurality of phosphor layers of respective, different</p>

		<p>luminescent colors, elongated phosphor stripes of the plurality of phosphor layers being arranged in a plurality of successive and repetitive sets thereof respectively corresponding to the plurality of sets of address electrodes, the phosphor stripes extend to and almost entirely cover the sidewalls of the barriers</p> <p>each pair of display electrodes defining, with each intersecting set of address electrodes and associated set of respectively corresponding phosphor layer stripes, a corresponding image element and each address electrode and associated phosphor stripe, within the image element, comprising a unit luminescent area, each image element correspondingly comprising plural unit luminescent areas respectively corresponding to the plural primary colors.</p>
Claims 36, 38, 54 and 56	Claim 17	Patent '500 discloses a PDP wherein each of the image elements has an almost square configuration (combined dimensions in the first and second directions substantially the same) and each of the stripes of the phosphor layers has a rectangular shape that is obtained by dividing the square configuration of the image element by a factor of three (the plural cells of each set are of a common width in the second direction).
Claims 42 and 59	Claim 18	Patent '500 discloses a PDP wherein each of the display electrodes comprises a combination of a transparent conductor line and a metal line and having a predetermined discharge gap at a central portion of the cell.
Claims 43 and 60	Claim 25	Patent '500 discloses a PDP wherein each of the barriers comprises a low melting glass top portion containing a dark colorant.

Allowable Subject Matter

Claims 33, 51, 68 and 71 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (703) 305-1083. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382. Additionally, the following fax phone numbers can be used during the prosecution of this application (703) 872-9318 (for response before a Final Action) and (703) 872-9319 (for response after a Final Action).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

(initials) 8/6/03
Mariceli Santiago
Patent Examiner
Art Unit 2879


ASHOK PATEL
PRIMARY EXAMINER